CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/BTS/CSR-07/089e/CEMENT/2016-17 Date: 13.07.2016

TEST REPORT ON CEMENT

* CUSTOMER	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
*AGENCY	:	**Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
*NAME OF THE WORK	:	Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	:	BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
SAMPLE ID	:	Cement
SAMPLE RECEIVED ON	:	11.07.2016
PERIOD OF TESTING	:	11.07.2016 to 13.07.2016

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	28.50 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	190 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	475 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

Note:

⇒ The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/BTS/CSR-07/089e/SAND-Gradation/2016-17 : 13.07.2016

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. B.T. Surendra,**
# 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.

*** Name of Work** : Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.

Reference : BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016

Technical Reference : IS : 2386 Part 1 - 1963 RA-2007

Sample ID : Fine Aggregates

Sample Received on : 11.07.2016

Date of Testing : 13.07.2016

Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	92.52	90-100	90-100	90-100	95-100
2.36	76.98	60-95	75-100	85-100	95-100
1.18	48.52	30-70	55-90	75-100	90-100
600 Micron	22.85	15-34	35-59	60-79	80-100
300 Micron	10.69	5-20	8-30	12-40	15-50
150 Micron	4.45	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/BTS/CSR-07/089e/AGG/GR/2016-17 : 13.07.2016

TEST REPORT ON COARSE AGGREGATES

* Customer	: **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	: **Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
* Name of Work	: Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	: BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
Technical Reference	: IS : 2386 Part 1 -1963 RA-2007
Sample ID	: Coarse Aggregates (40mm)
Sample Received on	: 11.07.2016
Date of Testing	: 13.07.2016

Total Wt. of Aggregates in gms= **7000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970 (RA- 2007)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	96.53	95-100	85-100
20	33.46	30-70	0-20
10	12.57	10-35	0-5
4.75	1.64	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/BTS/CSR-07/089e/CC Solid Block/2016-17 : 16.07.2016

TEST REPORT ON CEMENT CONCRETE SOLID BLOCKS

* Customer	: **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	: **Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
* Name of the Work	: Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	: BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
Sample Received on	: 11.07.2016
Date of Testing	: 16.07.2016
Size of Blocks	: 400mm x 200mm x 200mm
Cross Sectional Area	: 80000 mm^2
Technical Reference	: IS: 2185 (Part 1) - 2005
No. of Blocks Tested	: 08

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Requirement as per IS 2185 (Part 1) - 2005
1	Block 1	34.87	265.7	3.32	Minimum required Compressive Strength of Individual Units 3.20 N/mm^2
2	Block 2	33.92	266.5	3.33	
3	Block 3	32.74	262.5	3.28	
4	Block 4	31.68	263.8	3.30	
5	Block 5	32.53	265.1	3.31	
6	Block 6	33.37	266.5	3.33	
7	Block 7	32.29	261.9	3.27	
8	Block 8	34.46	263.5	3.29	

*Information is furnished by the Customer/Representative.

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AEE (VRP) SD

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/BTS/CSR-07/089e/CUBE/2016-17 25.08.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	: **Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
* Name of the work	: Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	: BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
* Sample ID	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
* Grade of Concrete	: M_{15}
Compressive Strength as on	: 28^{th} day
Sample Received on	: 25.08.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	28.07.2016	25.08.2016	8.159	374.8	16.66
2	28.07.2016	25.08.2016	8.247	386.5	17.18
3	28.07.2016	25.08.2016	8.361	403.7	17.94

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.09/BTS/CSR-07/089e/Precast Slab/2016-17 10.08.2016

CEMENT CONCRETE CORE (PRECAST SLAB) TEST REPORT

* Customer	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
* Name of work	:	Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	:	BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
Techinical Reference	:	IS:516-1959 (Reaffirmed 2008), SP-24:1983.
Sample ID	:	Precast Slab
Sample Received on	:	05.08.2016
Date of Testing	:	10.08.2016

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	75.00	0.371	2519.32	1.50	0.965	32.0	16.29	17.59	16.97	21.22
2	50.00	76.00	0.380	2546.48	1.52	0.960	32.6	16.58	17.91	17.19	21.49
3	50.00	77.00	0.389	2572.94	1.54	0.955	32.9	16.78	18.12	17.30	21.63

* Information is furnished by the Customer/Representative

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

****

VISHWANATH .C
Quality Manager

AEE (VRP) SD

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/BTS/WMM/Gradation/2016-17 02.09.2016

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Mr. B.T. Surendra,**
1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.

Name of Work : Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.

Reference : BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016

Date of Testing : 02.09.2016

Material : WMM

Sample ID : WMM Layer

Oven Dry Wt (gm): **7650**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	275	275	3.6	96.4	95-100
22.4	2535	2810	36.7	63.3	60-80
11.2	1320	4130	54.0	46.0	40-60
4.75	955	5085	66.5	33.5	25-40
2.36	860	5945	77.7	22.3	15-30
0.600	745	6690	87.5	12.5	8-22
0.075	580	7270	95.0	5.0	0-8

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 30 days from the date of testing.

Civil-Tech Consultants & Engineers Bangalore

****

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/BTS/WMM/AIV/2016-17 02.09.2016

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
Name of the Work	Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
Sample ID	WMM Layer
Type of Mix	Wet Mix macadam
Date of Testing	02.09.2016

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	383	387	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	299	300	
4	Aggregate Impact value = percent fines	21.93	22.48	
	100* (W_2/W_1)%			22.21

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

Note:

→ This test report should not be reproduced except in full, without written approval of the laboratory

→ The results indicated above are based on the tests carried out on the samples received in the laboratory

→ Any Query regarding the report must be reported within 30 days from the date of testing.

****

AEE (VRP) SD

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/BTS/WMM/S-T/2016-17 02.09.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
Name of Work	Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Sample ID	WMM Layer
Date of Testing	02.09.2016

Result : Flakiness Index = **11.34%**

Elongation Index = **13.59%**

Result : Combined Flakiness & Elongation index 24.93%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

→ This test report should not be reproduced except in full, without written approval of the laboratory

→ The results indicated above are based on the tests carried out on the samples received in the laboratory

→ Any Query regarding the report must be reported within 30 days from the date of testing.

****

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ವಿದ್ಯಾರಣ್ಯಪುರ ಉಪ ವಿಭಾಗ,
ಯಲಹಂಕ ವಲಯ,
ಬೃ. ಬೆಂ. ಮ. ಪಾ., ಬೆಂಗಳೂರು-97.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/BTS/WMM/S-T/2016-17 02.09.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
Name of Work	Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Sample ID	WMM Layer
Date of Testing	02.09.2016

Result : Flakiness Index = **11.34%**

Elongation Index = **13.59%**

Result : Combined Flakiness & Elongation index 24.93%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

→ This test report should not be reproduced except in full, without written approval of the laboratory

→ The results indicated above are based on the tests carried out on the samples received in the laboratory

→ Any Query regarding the report must be reported within 30 days from the date of testing.

****

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ವಿದ್ಯಾರಣ್ಯಪುರ ಉಪ ವಿಭಾಗ,
ಯಲಹಂಕ ವಲಯ,
ಬೃ. ಬೆಂ. ಮ. ಪಾ., ಬೆಂಗಳೂರು-97.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/BTS/BM/Bitumen/2016-17 08.09.2016

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS2386 and IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
AGENCY	**Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
NAME OF THE WORK	Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
SAMPLE I/D	3rd Main Road, Virupakshapura, Ward No. 09.
DATE OF TESTING	08.09.2016

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482.5	481.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	17.5	18.50
7. Bitumen content in %	3.50	3.70
8. Average	**3.60**	

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory

Þ Any Query regarding the report must be reported within 30 days from date of testing.

****

AEE (VRP) SD

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.09/BTS/BM/Gradation/2016-17 08.09.2016

GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS2386 and IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
AGENCY	**Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
NAME OF THE WORK	Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
SAMPLE I/D	3rd Main Road, Virupakshapura, Ward No. 09.
DATE OF TESTING	08.09.2016

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	31.69	6.57	6.57	93.43	90-100
13.2	92.56	19.18	25.75	74.25	56-88
4.75	264.67	54.85	80.61	19.39	16-36
2.36	18.89	3.92	84.52	15.48	4-19
0.3	36.53	7.57	92.09	7.91	2-10
0.075	15.98	3.31	95.40	4.60	0-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	32.87	6.83	6.83	93.17	90-100
13.2	83.46	17.33	24.16	75.84	56-88
4.75	260.37	54.07	78.23	21.77	16-36
2.36	46.79	9.72	87.95	12.05	4-19
0.3	25.58	5.31	93.26	6.74	2-10
0.075	8.45	1.75	95.02	4.98	0-8

Note:

- This test report should not be reproduced except in full, without written approval of the laboratory.
- The results indicated above are based on the tests carried out on the samples received in the laboratory.
- Any Query regarding the report must be reported within 30 days from the date of testing.

****

AEE (VRP) SD

M/s. Civil-Tech Consultants & Engineers

23/14, 7th Cross, 3rd Stage,
4th Block, Shakthi Ganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No: CTCE/BBMP/W.No.09/BTS/BC/Bitumen/2016-17 09.09.2016

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

AASHTO T 164

CLIENT	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
AGENCY	**Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
NAME OF THE WORK	Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
SAMPLE I/D	3rd Main Road, Virupakshapura, Ward No. 09.
DATE OF TESTING	09.09.2016

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	473.5	474
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26.5	26.00
7. Bitumen content in %	5.30	5.20
8. Average	**5.25**	

Note:

- This test report should not be reproduced except in full, without written approval of the laboratory
- The results indicated above are based on the tests carried out on the samples at site
- Any Query regarding the report must be reported within 30 days from the date of testing

AEE (VRP) SD

****

M/s. Civil-Tech Consultants & Engineers
23/14, [illegible], 3rd Stage,
4th Block, Shakthi Ganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No: CTCE/BBMP/W.No.09/BTS/BC/Gradation/2016-17 09.09.2016

BITUMEN GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

AASHTO T 30

CLIENT	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
AGENCY	**Mr. B.T. Surendra,** # 1606/29, 7th A Cross, 7th Main Road, Govindarajanagara, Bangalore - 79.
NAME OF THE WORK	Improvements and Asphalting to roads at Virupakshapura and surrounding areas in Ward No. 09 in Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/EE/BTP/WO/297/2015-16 Dated: 19.03.2016
SAMPLE I/D	3rd Main Road, Virupakshapura, Ward No. 09.
DATE OF TESTING	09.09.2016

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	42.15	8.90	8.90	91.10	79-100
9.5	36.28	7.66	16.56	83.44	70-88
4.75	73.16	15.45	32.01	67.99	53-71
2.36	66.34	14.01	46.03	53.97	42-58
1.18	51.89	10.96	56.98	43.02	34-48
0.6	63.57	13.43	70.41	29.59	26-38
0.3	43.95	9.28	79.69	20.31	18-28
0.15	32.15	6.79	86.48	13.52	12-20
0.075	34.87	7.36	93.85	6.15	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	38.56	8.14	8.14	91.86	79-100
9.5	47.21	9.96	18.09	81.91	70-88
4.75	72.36	15.27	33.36	66.64	53-71
2.36	59.87	12.63	45.99	54.01	42-58
1.18	72.15	15.22	61.21	38.79	34-48
0.6	40.18	8.48	69.69	30.31	26-38
0.3	42.26	8.92	78.61	21.39	18-28
0.15	37.94	8.00	86.61	13.39	12-20
0.075	32.65	6.89	93.50	6.50	4-10

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory.

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory.

Þ Any Query regarding the report must be reported within 30 days from the date of testing

****

M/s. Civil-Tech Consultants & Engineers

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

4th Block, 3rd Stage, Shakthi Ganapathinagara, Basaveshwaranagar, Bangalore-560079.